Installation and service instructions

for contractors

Vitodens 100-W
Type WB1B, 9.0 to 35.0 kW
Wall mounted gas fired condensing boiler
Natural gas and LPG version

VITODENS 100-W

5354 802 GB 2/2008

Please keep safe.

Safety instructions

Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained

Danger
This symbol warns against the risk of injury.

Please note
This symbol warns against the risk of material losses and environmental pollution.

Note
Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively designed for qualified personnel.

- Work on gas equipment must only be carried out by a qualified gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations

Observe the following when working on this system

- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,
- the Code of Practice of relevant trade associations,
- all current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards.

If you smell gas

Danger
Escaping gas can lead to explosions which may result in serious injury.

- Never smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances ON or OFF.
- Close the gas shut-off valve.
- Open windows and doors.
- Remove all people from the danger zone.
- Notify your gas or electricity supplier from outside the building.
- Shut off the electricity supply to the building from a safe place (outside the building).

If you smell flue gas

Danger
Flue gas can lead to life-threatening poisoning.

- Shut down the heating system.
- Ventilate the boiler room.
- Close all doors leading to the living space.

5354 802 GB

Safety instructions (cont.)

Working on the system

- When using gas as fuel, also close the main gas shut-off valve and safeguard against unauthorised reopening.
- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing a separate fuse or by means of a main isolator.
- Safeguard the system against unauthorised reconnection.

Please note
Electronic modules can be damaged by electro-static discharges.
Touch earthed objects, such as heating or water pipes, to discharge static loads.

Repair work

Please note
Repairing components which fulfil a safety function can compromise the safe operation of your heating system.
Replace faulty components only with original Viessmann spare parts.

Ancillary components, spare and wearing parts

Please note
Spare and wearing parts which have not been tested together with the heating system can compromise its function. Installing non-authorised components and non-approved modifications/conversion can compromise safety and may invalidate our warranty.
For replacements, use only original spare parts from Viessmann or those which are approved by Viessmann.

5354 802 GB

Index

Installation instructions

Preparing for installation

Product information 5
Preparing for installation 5

Installation sequence

Installing the boiler and making all connections 9
Opening the control unit 13
Electrical connections 14

Service instructions

Commissioning, inspection, maintenance

Steps - commissioning, inspection and maintenance 17
Further details regarding the individual steps 18

Troubleshooting

Function sequence and possible faults 32
Fault messages on the display 33
Repairs 37

Gas type conversion

Converting from LPG to natural gas 47

Control unit

Functions and operating conditions in weather-compensated mode 50

Designs

Connection and wiring diagram 51

Parts lists 53

Specification 59

Certificates

Declaration of conformity 61

Keyword index 62

5354 802 GB

Product information

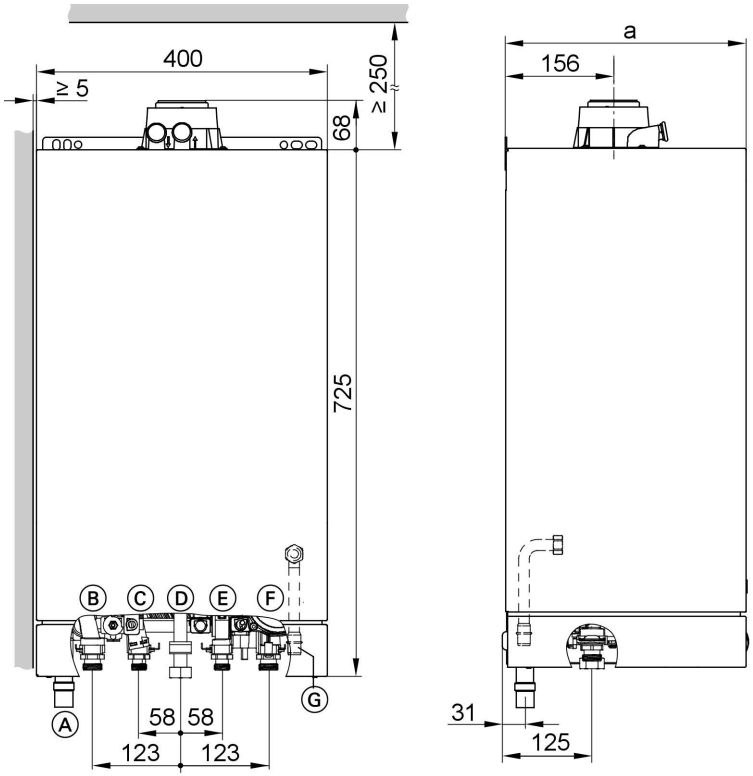
Vitodens 100-W, WB1B

Set up for operation with natural gas.

Preparing for installation

Preparing the boiler installation

Dimensions and connections



5354 802 GB

Ⓐ Condensate drain: Plastic pipe ∅ 22 mm
Ⓑ Heating flow

Preparing for installation (cont.)

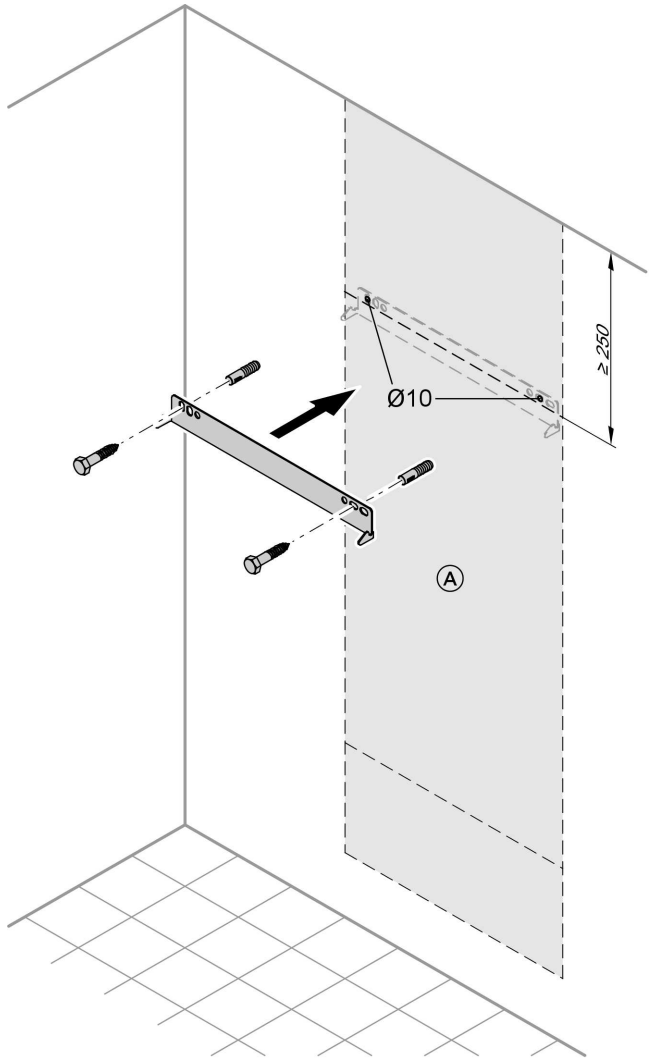
Ⓒ Gas fired condensing boiler:
Cylinder flow
Gas fired condensing combi boiler:
DHW
Ⓓ Gas connection
Ⓔ Gas fired condensing boiler:
Cylinder return
Gas fired condensing combi boiler:
Cold water
Ⓕ Heating return
Ⓖ Drain safety valve

Rated output range	kW	9 - 26	11 - 30	11 - 35
a	mm	340	360	360

5354 802 GB

Preparing for installation (cont.)

Fitting the wall retainer



Ⓐ Installation template Vitodens

Preparing for installation (cont.)

1. Position the supplied installation template on the wall.
2. Mark out the rawl plug holes.
3. Drill ∅10 mm holes and insert the supplied rawl plugs.
4. Fit wall retainer with screws supplied.

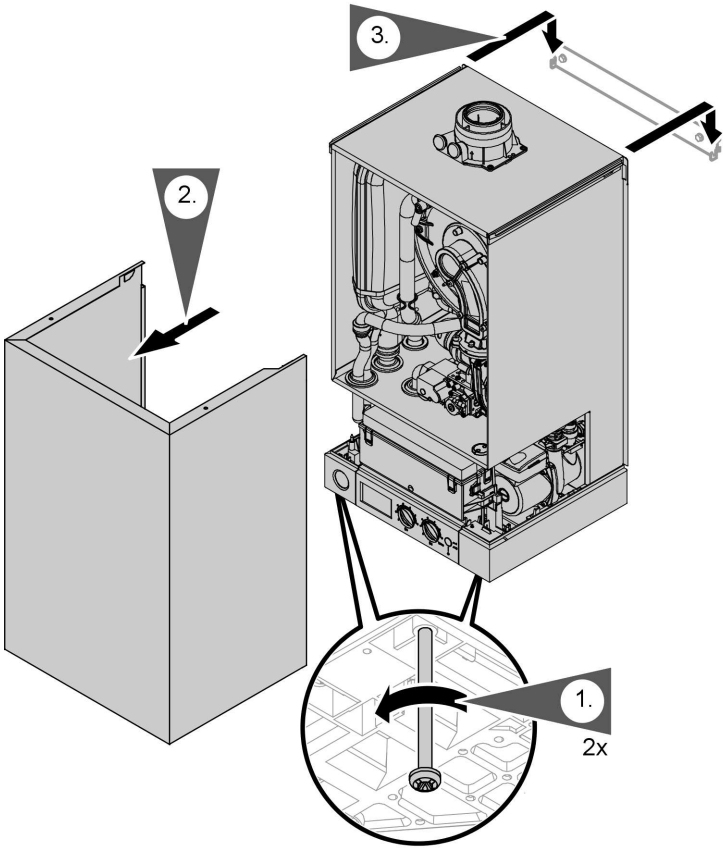
Preparing the connections

1. Prepare the water connections. Flush the heating system.
2. Prepare gas connection.
3. Prepare the electrical connections. Observe valid IEEE standards.
   - A 1.5 m long power cable is fitted as standard.
   - Accessory cables: NYM-O 2-core min. 0.5 mm^2.

5354 802 GB

Installing the boiler and making all connections

Removing the front panel and mounting the boiler



1. Release screws at the bottom of the boiler; do not remove completely.

2. Remove front panel.

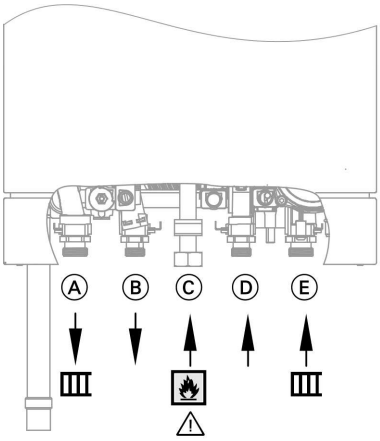
3. Hook the boiler into the wall retainer.

5354 802 GB

Installing the boiler and making all connections (cont.)

Installing connections on the water side

For fittings on the heating water side and DHW side, see separate installation instructions.

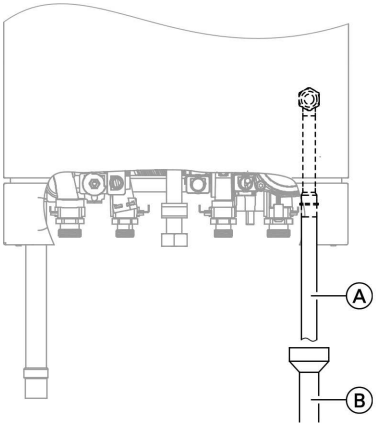


Ⓐ Heating flow
Ⓑ Gas fired condensing boiler:
Cylinder flow
Gas fired condensing combi boiler:
DHW
Ⓒ Gas connection
Ⓓ Gas fired condensing boiler:
Cylinder return
Gas fired condensing combi boiler:
Cold water
Ⓔ Heating return

5354 802 GB

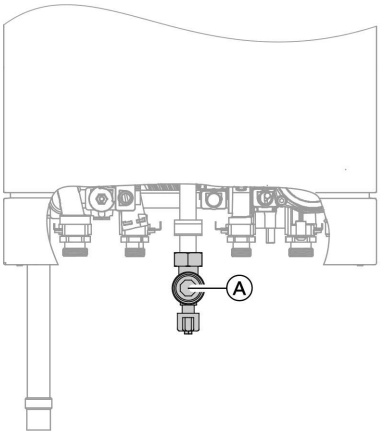
Installing the boiler and making all connections (cont.)

Safety valve connection



Connect safety valve drain Ⓐ (∅ 15 mm) with visible outlet Ⓑ to the dewatering system or route with visible outlet through the external wall.

Gas connection



1. Connect gas shut-off valve to connection Ⓐ.
2. Carry out a leak/tightness test.

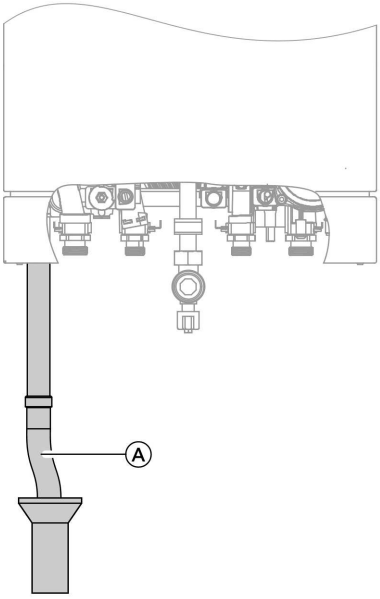
   ! **Please note**
   Excessive test pressure may damage the boiler and the gas valve.
   Max. test pressure 150 mbar. Where higher pressure is required for tightness tests, separate the boiler and the gas valves from the gas supply pipe (undo the fitting).

3. Vent the gas supply pipe.

5354 802 GB

Installing the boiler and making all connections (cont.)

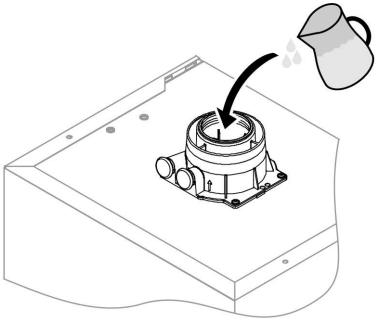
Condensate connection



Connect condensate drain Ⓐ with a slope and a pipe vent to the public sewer.
Observe the local waste water regulations.

Note
Fill the siphon with water before start-up.

Filling the siphon with water



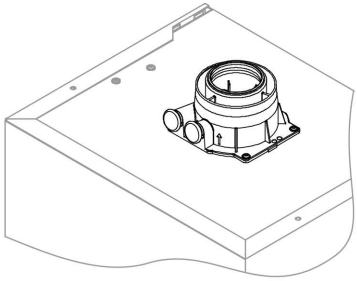
Fill a minimum of 0.3 l of water into the flue gas connection.

! **Please note**
At commissioning, flue gas may be emitted from the condensate drain.
Fill the siphon with water before start-up.

5354 802 GB

Installing the boiler and making all connections (cont.)

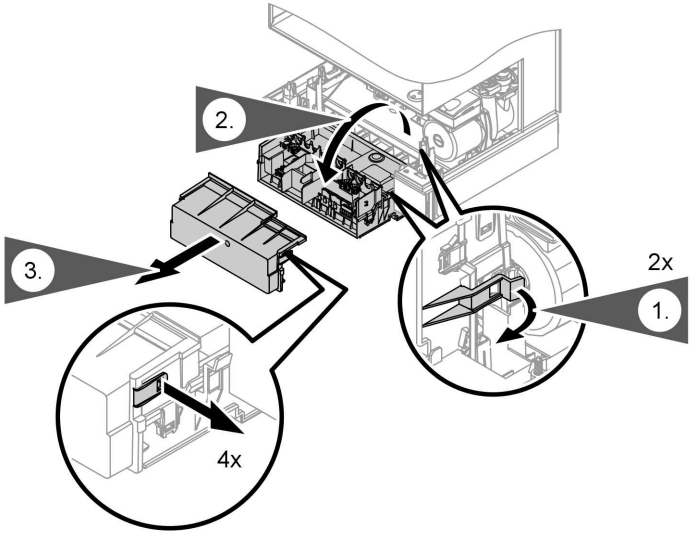
Balanced flue connection



Connect the balanced flue.
During installation and positioning of the flue gas system, observe building regulations part L and BS 5440.

Flue gas system installation instructions.

Opening the control unit

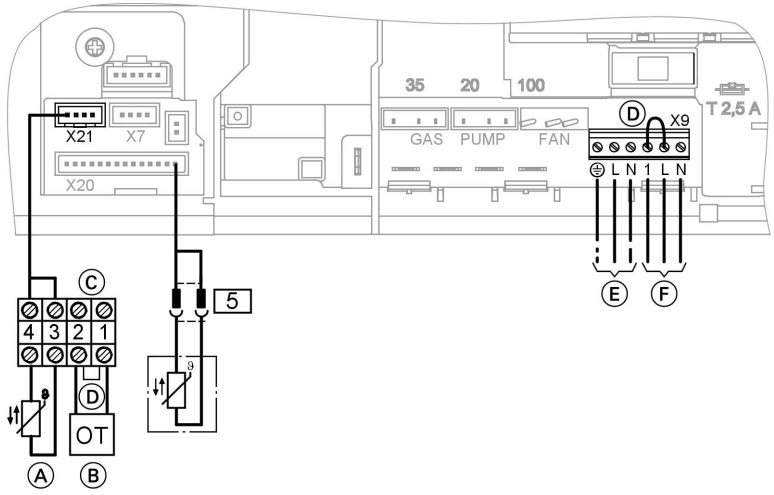


Opening the control unit (cont.)

Please note
Electronic modules can be damaged by electrostatic discharges.
Touch earthed objects, such as heating or water pipes, to discharge static loads.

Electrical connections

Information regarding the connection of accessories
For details of accessories, also observe their separate installation instructions provided.



Electrical connections (cont.)

5 Gas fired condensing boilers only: Cylinder temperature sensor (plug on the cable harness outside the control unit)

Note
Gas fired condensing boiler without DHW cylinder:
For operation without a DHW cylinder, set rotary selector "🌡🚰" to "0".

Ⓐ Only for weather-compensated mode:
Outside temperature sensor (accessory)

Ⓑ Open room thermostat
Remove jumper Ⓓ when making this connection.

Ⓒ Connection line (accessory)

Ⓓ Jumper

Ⓔ Power supply (230 V, 50 Hz).

Danger
Incorrect core termination can cause severe injuries and damage to the equipment.
Take care not to interchange wires "L1" and "N".

The power supply must be equipped with a neutral conductor. Water pipes should be connected to the earth bonding of the house in question.

Ⓕ Vitotrol 100

Separate installation instructions

Outside temperature sensor (accessory)

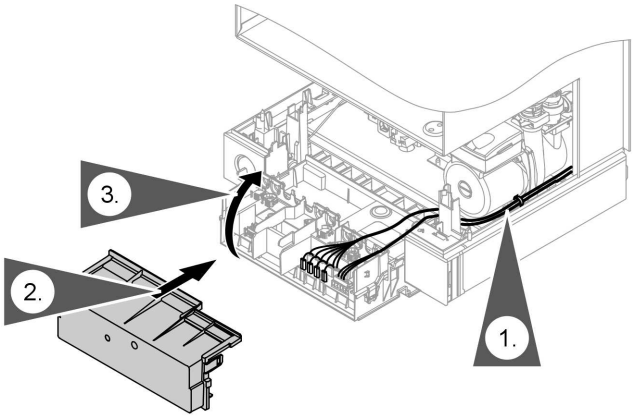
1. Plug the power cable supplied with the outside temperature sensor into slot "X21".

2. Connect the outside temperature sensor to terminals 3 and 4.

Electrical connections (cont.)

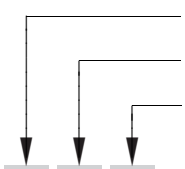
Routing connecting cables and closing control unit

Please note
Power cables will be damaged if they contact hot parts.
When routing and securing power cables on site, ensure that the maximum permissible temperatures for these cables are not exceeded.



Steps - commissioning, inspection and maintenance

For further information regarding the individual steps, see the page indicated



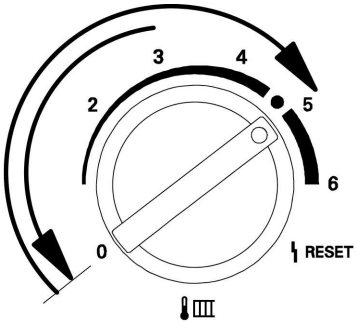
				Page
•	•	•	**1. Filling the heating system**	18
•	•	•	**2. Venting the boiler by flushing out (after venting system)**	20
•			**3. Adjusting circulation pump to suit heating system**	20
•	•	•	**4. Changing to operation with LPG**	21
•			**5. Checking the CO_2 content**	22
	•	•	**6. Burner removal**	24
	•	•	**7. Checking the burner gasket and the burner gauze assembly**	25
	•	•	**8. Checking and adjusting electrodes**	26
	•	•	**9. Cleaning the heat exchanger**	27
	•	•	**10. Checking the condensate drain and cleaning the siphon**	28
	•	•	**11. Burner installation**	29
•	•	•	**12. Checking all connections on the heating water side and DHW side for leaks**	
•	•	•	**13. Checking the tightness of electrical connections**	
•	•	•	**14. Checking all gas equipment for tightness at operating pressure**	30
	•	•	**15. Fitting the front panel**	30
•			**16. Instructing the system user**	31

5354 802 GB

Further details regarding the individual steps

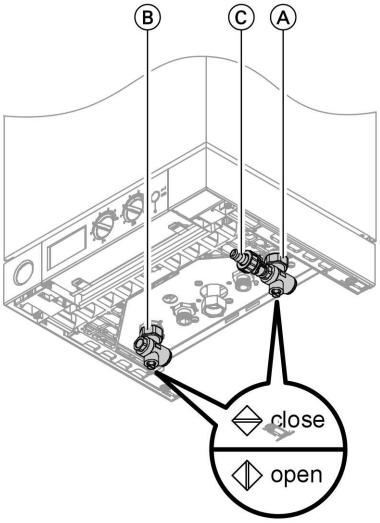
Filling the heating system

Please note
Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.
- Thoroughly flush the entire heating system prior to filling it with water.
- Only use fill water of potable quality.
- Soften fill water harder than 150 ppm.
- An antifreeze additive suitable for heating systems can be mixed with the fill water.



1. Close the gas shut-off valve.
2. Switch ON the power.
3. Turn rotary selector "⚙" anticlockwise for less than 2 s and then clockwise back to the control range on the right.
   Filling function is enabled. This function will end automatically after 20 min or after ON/OFF switch has been turned OFF.

Further details regarding the individual steps (cont.)



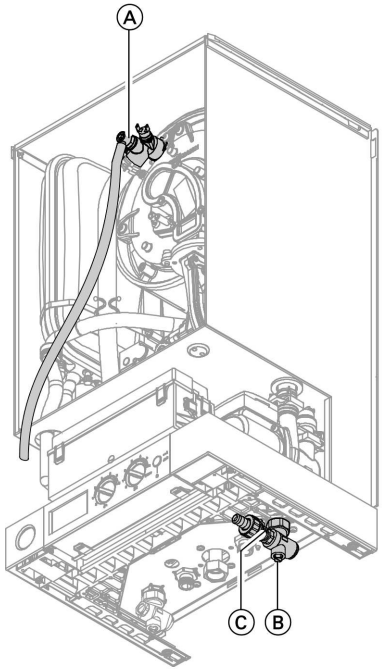
4. Open shut-off valves Ⓐ and (if installed) Ⓑ.
5. Connect filling hose to valve Ⓒ and open valve Ⓒ.
6. Fill heating system. (Minimum system pressure > 0.8 bar).
7. Close valve Ⓒ .

Note
If external filling equipment is installed, it must meet the requirements of the Water Fittings Regulations 1999 Section G 24.1 and G 24.2.

5354 802 GB

Further details regarding the individual steps (cont.)

Venting the boiler by flushing out (after venting system)



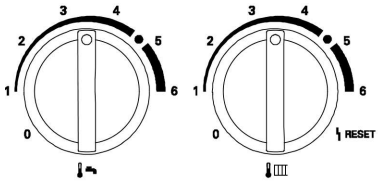
1. Connect the drain hose on shut-off valve Ⓐ to a drain.
2. Close shut-off valve Ⓑ.
3. Open valves Ⓐ and Ⓒ and flush at mains pressure, until no sound of escaping air can be heard.
4. First shut off valve Ⓐ then valve Ⓒ.
5. Operating pressure ≥ 0.8 bar; adjust with valve Ⓒ.
6. Open shut-off valve Ⓑ.

Adjusting circulation pump to suit heating system

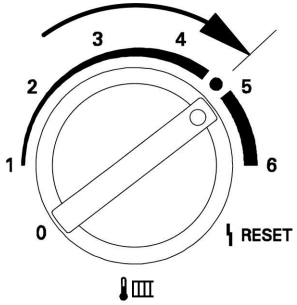
In the delivered condition, the circulation pump in heating mode is set to stage 1. If necessary to suit the heating system, the circulation pump can be adjusted to stage 2.

1. Turn ON/OFF switch ON.

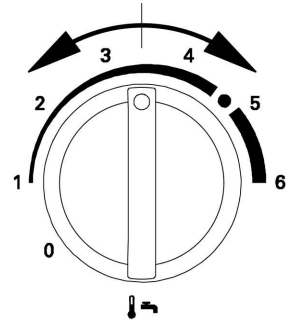
Further details regarding the individual steps (cont.)



2. Simultaneously turn rotary selectors "🌡🚿" and "🌡♨" to their central position.
"SERV" appears on the display.



3. Within 2 s turn rotary selector "♨🌡" to the top right area.
"♨" and the set value flash on the display.



4. Adjust the control unit to stage 1 or 2 by turning rotary selector "🌡🚿".
The display shows:
- **"1"**for operation with stage 1
  or
- **"2"**for operation with stage 2

5. Do **not** adjust the rotary selectors for 15 s. The set operating mode is then saved and the control unit returns to standard mode.

Changing to operation with LPG

In the delivered condition, the boiler is set up for operation with natural gas. For operation with LPG, the gas nozzle must be changed and the gas type converted in the control unit.

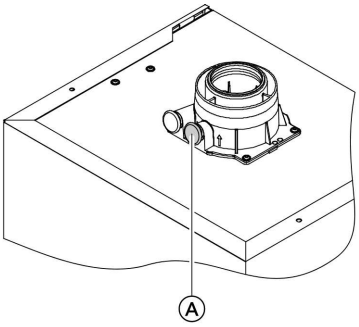
Separate installation instructions.

Changing from LPG to natural gas - see page 47

5354 802 GB

Further details regarding the individual steps (cont.)

Checking the CO_2 content

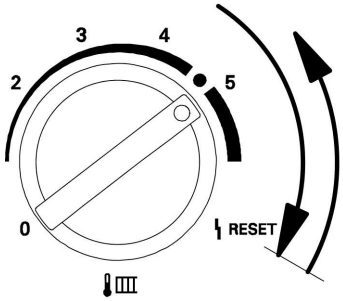


1. Connect a flue gas analyser at flue gas port Ⓐ on the boiler flue connection.

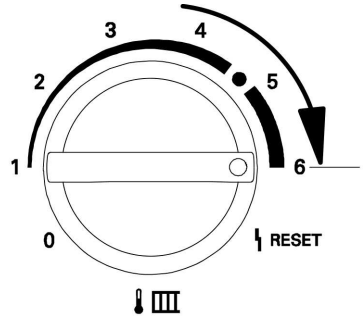
2. Start up the boiler and check for tightness.

Installation and service instructions

Danger
Escaping gas leads to a risk of explosion.
Check gas equipment for tightness.



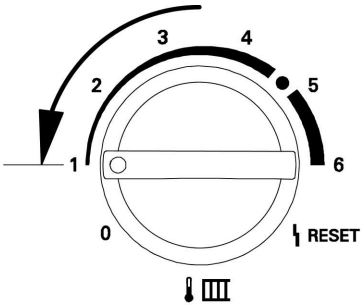
3. Turn rotary selector "🌡" clockwise for less than 2 s and then anticlockwise back to the control range on the right.
The display shows **"SERV"** and the boiler water temperature is shown.



4. Adjust the upper output:
Turn rotary selector "🌡" to the control range on the right.
The display shows 5 bars for upper output.

5. Measure the CO_2 content for upper output.
The CO_2 content must be between 7.5 and 10.5 %.

Further details regarding the individual steps (cont.)

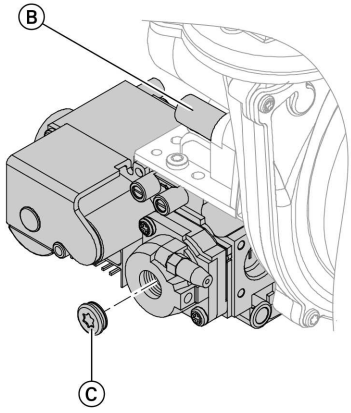


6. Adjust the lower output:
Turn rotary selector "🌡" to the left control range.
The display shows 1 bar for lower output.

7. Test the CO_2 content for lower output.
The CO_2 content must be between 7.5 and 10.5 %.

8. ■ If the CO_2 content is within the given range, continue with point 15.
■ If the CO_2 content is **not** within the given range, check the flue gas/ventilation air system for tightness.
Remedy any leaks.

9. Test the CO_2 content for upper and lower output again.
If the CO_2 content is **still not** within the given range, adjust the CO_2 content.



10. Adjusting the CO_2 content

Adjust the upper output.

11. With the adjusting screw Ⓑ, set the CO_2 content for upper output to 9 %.

12. Adjust the lower output.

13. Remove cover Ⓒ from gas train.
With the adjusting screw below, set the CO_2 content for lower output to 8.7 %.

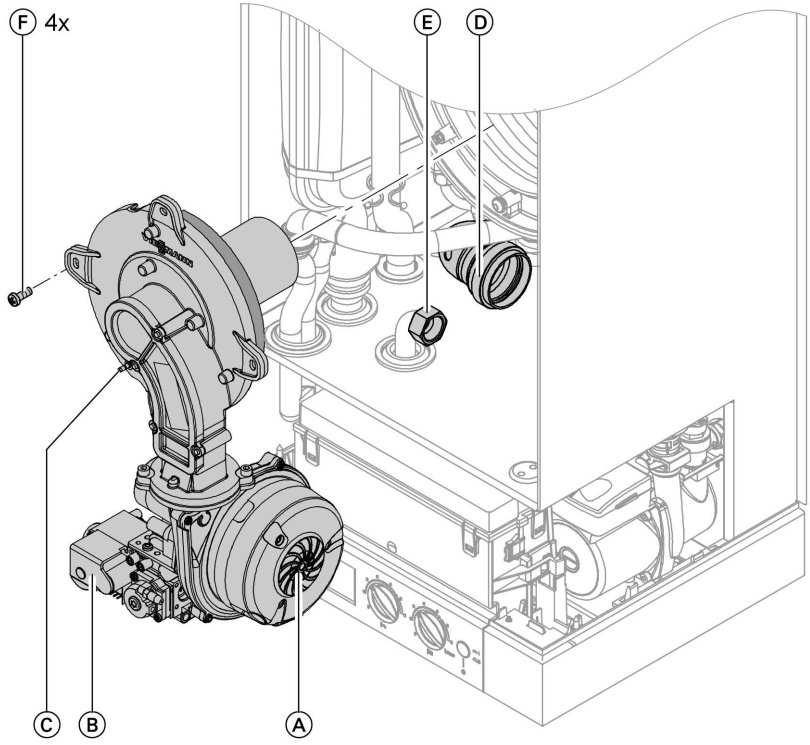
14. Refit cover Ⓒ.

Further details regarding the individual steps (cont.)

15. Shut the boiler down, remove flue gas analyser and close flue gas port Ⓐ.

16. Return rotary selectors "🌡🚿" and "🏢🌡" to their original positions.

Burner removal



1. Switch OFF the power.

2. Shut off the gas supply.

3. Pull power cables from fan motor Ⓐ, gas valve Ⓑ and electrodes Ⓔ.

4. Pull the venturi extension Ⓓ from the fan.

5354 802 GB

Further details regarding the individual steps (cont.)

5. Release gas supply pipe Ⓔ fitting.

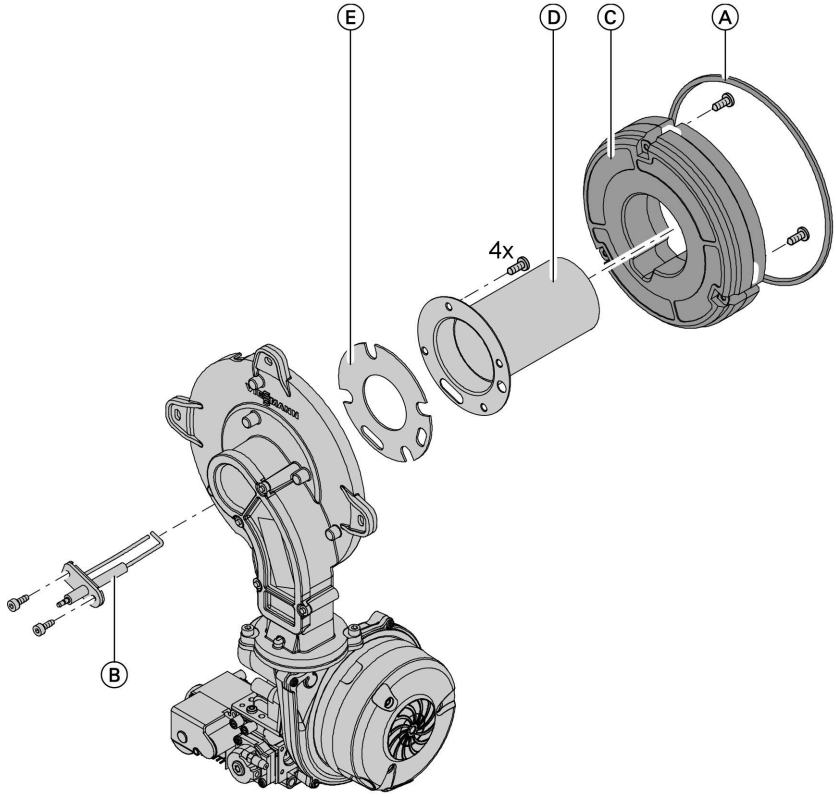
6. Undo four screws Ⓕ and remove the burner.

Please note
To prevent damage, never rest the burner on the gauze assembly.

Checking the burner gasket and the burner gauze assembly

Check burner gasket Ⓐ for damage and replace if required.

Replace the burner gauze assembly if it is damaged.

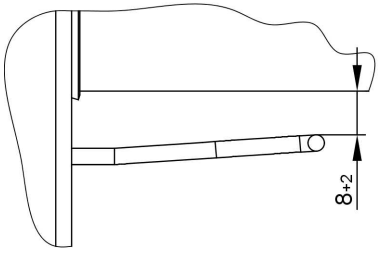


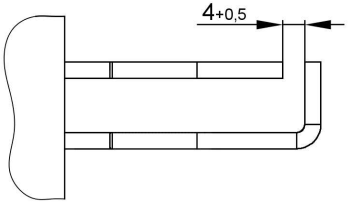
5354 802 GB

Further details regarding the individual steps (cont.)

1. Remove electrode Ⓑ.
2. Undo the three cheese-head screws and remove thermal insulating ring Ⓒ.
3. Undo the four Torx screws and remove burner gauze assembly Ⓓ with its gasket Ⓔ.
4. Insert and secure a new burner gauze assembly Ⓓ with a new gasket Ⓔ.
   Fixing screw torque: 3.5 Nm.
5. Refit thermal insulation ring Ⓒ.
   Fixing screw torque: 3.5 Nm.
6. Refit the electrode Ⓑ.
   Fixing screw torque: 3.5 Nm.

Checking and adjusting electrodes





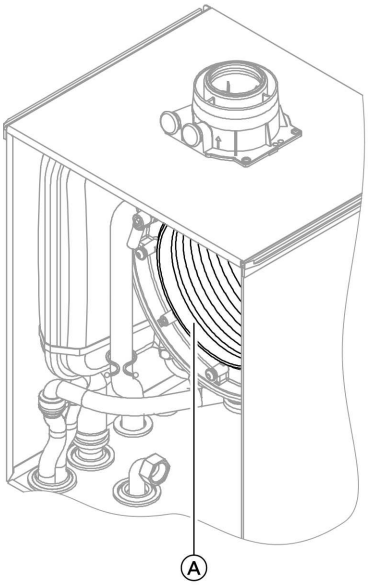
1. Check the electrode for wear and contamination.
2. Clean the electrode with a small brush (not with a wire brush) or emery paper.
3. Check the electrode gaps. If the gaps are not as specified or the electrode is damaged, replace and align the electrode together with a new gasket. Tighten the electrode fixing screws with 3.5 Nm.

5354 802 GB

Further details regarding the individual steps (cont.)

Cleaning the heat exchanger

! **Please note**
Scratches on parts that are in contact with flue gas can lead to corrosion.
Never use brushes to clean the heat exchanger.

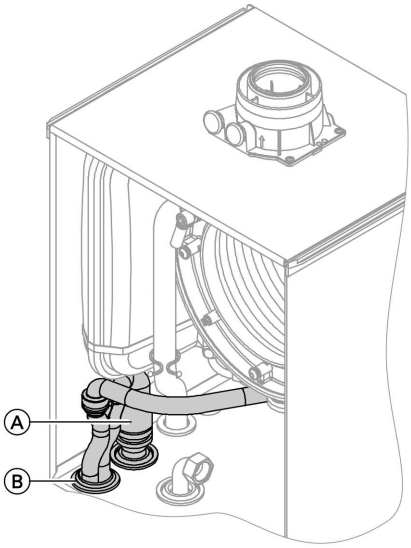


1. Use a vacuum cleaner to remove residues from the heat exchanger Ⓐ inside the combustion chamber.
2. If required, spray slightly acidic, chloride-free cleaning agents based on phosphoric acid (e.g. Antox 75 E) onto the heat exchanger Ⓐ and let the solution soak in for approx. 20 min.
3. Thoroughly flush the heat exchanger Ⓐ with water.

5354 802 GB

Further details regarding the individual steps (cont.)

Checking the condensate drain and cleaning the siphon

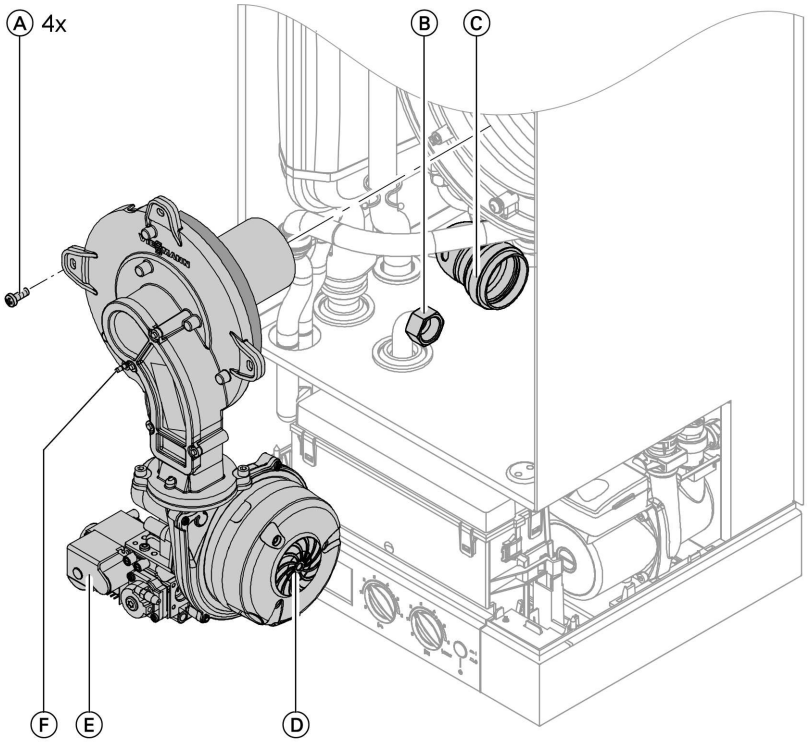


1. Check that the condensate can drain freely at the siphon.
2. Remove all hoses from siphon Ⓐ.
3. Release locking tabs at opening Ⓑ from underneath and remove siphon Ⓐ upwards.
4. Clean siphon Ⓐ and reinstall.
5. Refit all hoses. Secure drain hose with cable ties.
6. Fill siphon Ⓐ with water by pouring about 0.3 l of water into the combustion chamber.

5354 802 GB

Further details regarding the individual steps (cont.)

Burner installation



1. Install the burner and torque screws Ⓐ diagonally with 4.0 Nm.
2. Insert new gasket and tighten the fittings on gas supply pipe Ⓑ
3. Plug the venturi extension Ⓒ into the fan.
4. Replace electrical cables from fan motor Ⓓ, gas valve Ⓔ and ignition unit Ⓔ.
5. Reopen gas supply and switch on power supply.
6. Check the gas connections for tightness.

Danger
Escaping gas leads to a risk of explosion.
Check all fittings for tightness.

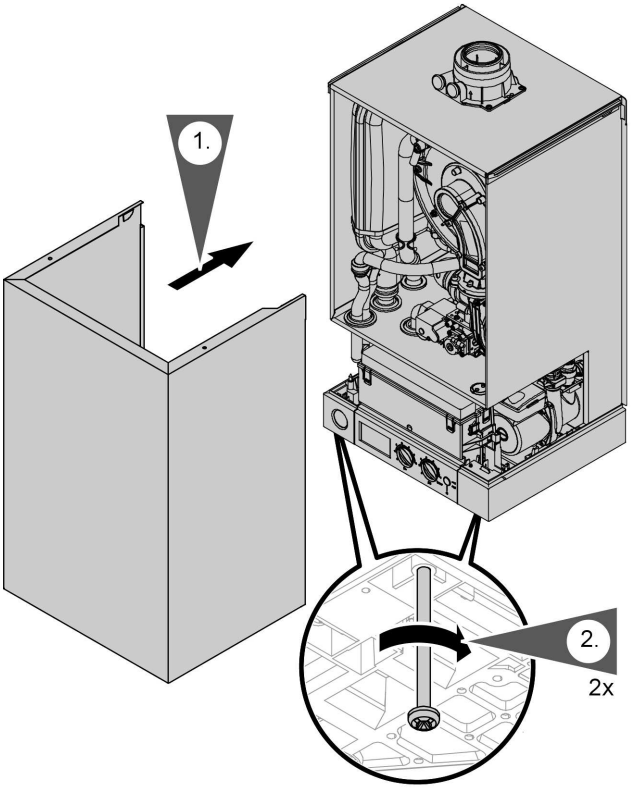
5354 802 GB

Further details regarding the individual steps (cont.)

Checking all gas equipment for tightness at operating pressure

Danger
Escaping gas leads to a risk of explosion.
Check gas equipment for tightness.

Fitting the front panel



1. Push front panel into place on the guide rails.

2. Tighten screws at the bottom.

5354 802 GB

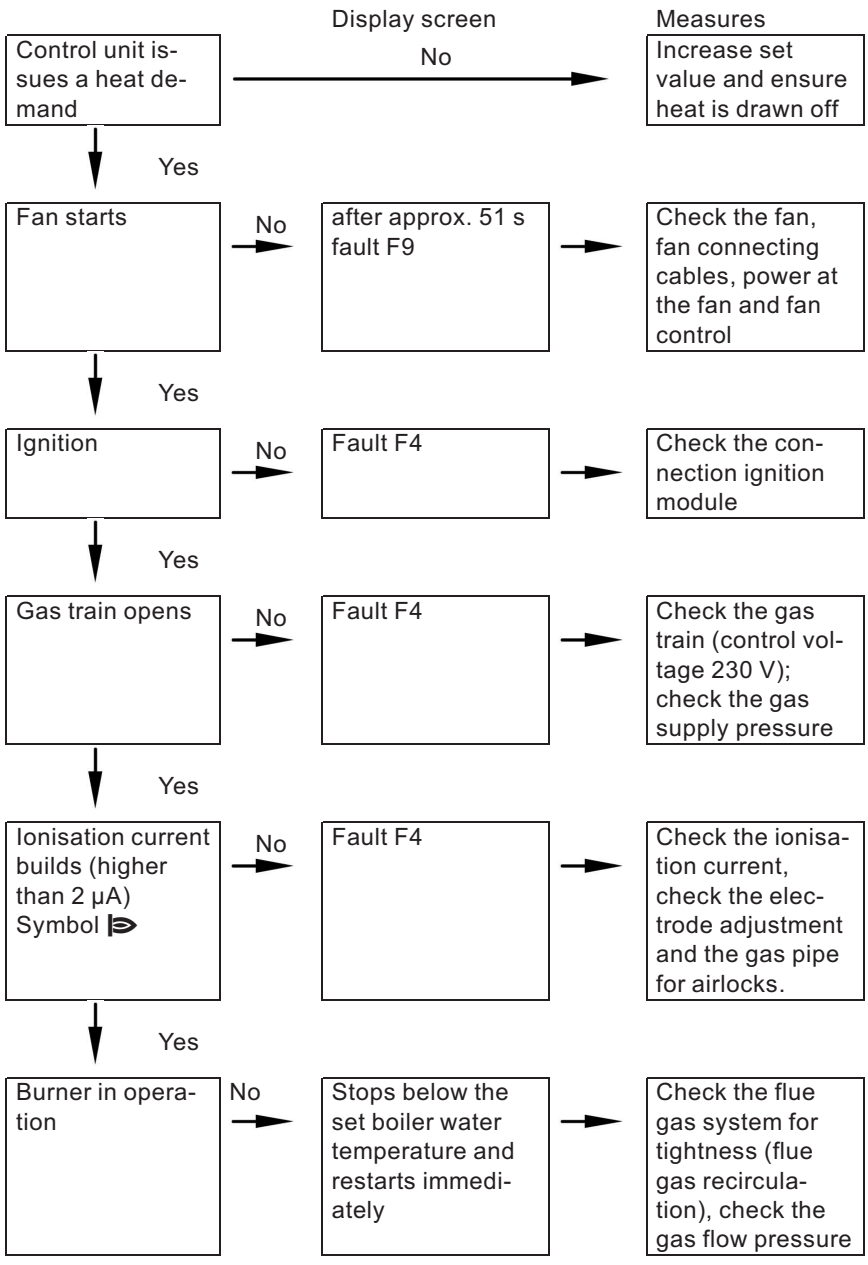
Further details regarding the individual steps (cont.)

Instructing the system user

The system installer must hand the operating instructions to the system user and instruct him/her in the operation of the system.

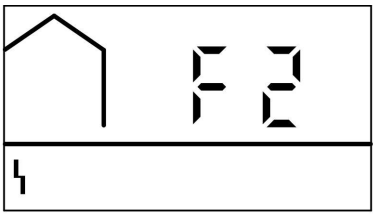
5354 802 GB

Function sequence and possible faults


Display screen
Measures
Control unit issues a heat demand
No
Increase set value and ensure heat is drawn off
Yes
Fan starts
No
after approx. 51 s fault F9
Check the fan, fan connecting cables, power at the fan and fan control
Yes
Ignition
No
Fault F4
Check the connection ignition module
Yes
Gas train opens
No
Fault F4
Check the gas train (control voltage 230 V); check the gas supply pressure
Yes
Ionisation current builds (higher than 2 µA) Symbol
No
Fault F4
Check the ionisation current, check the electrode adjustment and the gas pipe for airlocks.
Yes
Burner in operation
No
Stops below the set boiler water temperature and restarts immediately
Check the flue gas system for tightness (flue gas recirculation), check the gas flow pressure

5354 802 GB

Fault messages on the display



Faults are indicated by a flashing fault code with fault symbol "ϟ" on the display.
For fault code explanations see the following table.

Fault code on the display	System characteristics	Cause	Measures
10	Constant mode	Outside temperature sensor shorted out	Check the outside temperature sensor and lead (see page 37).
18	Constant mode	Outside temperature sensor lead broken	Check the outside temperature sensor and lead (see page 37).
30	Burner blocked	Boiler water temperature sensor shorted out	Check the boiler water temperature sensor (see page 39).
38	Burner blocked	Boiler water temperature sensor lead broken	Check the boiler water temperature sensor (see page 39).
50	No DHW heating	Cylinder temperature sensor shorted out	Check the sensor (see page 40).
51	No DHW heating	Outlet temperature sensor shorted out	Check the sensor (see page 42).
52	Burner blocked	Throughput sensor shorted out	Check connections and lead; replace sensor if required.
58	No DHW heating	Cylinder temperature sensor lead broken	Check the sensor (see page 40).
59	No DHW heating	Outlet temperature sensor lead broken	Check the sensor (see page 42).

5354 802 GB

Fault messages on the display (cont.)

Fault code on the display	System characteristics	Cause	Measures
5A	Burner blocked	Flow sensor lead broken	Check connections and lead; replace sensor if required.
A9	Regulated operation without Open Therm device	Communication fault Open Therm device	Check connections and lead; replace Open Therm device if required.
b0	Burner blocked	Flue gas temperature sensor shorted out	Check the sensor (see page 43).
b8	Burner blocked	Flue gas temperature sensor lead broken	Check the sensor (see page 43).
E5	Burner blocked	Internal fault	Check the ionisation electrode and cables. Press "Reset" (see page 36).
E6	Burner blocked	Water pressure too low	Top up with water.
F0	Burner blocked.	Internal fault	Replace the control unit.
F1	Burner in a fault state	Max. flue gas temperature exceeded	Check the flue gas system. Press "Reset" (see page 36).
F2	Burner in a fault state	The temperature limiter has responded	Check the heating system fill level. Check the circulation pump. Vent the system. Check the temperature limiter and connecting cables. Press "Reset" (see page 36).
F3	Burner in a fault state	Flame signal is already present at burner start	Check the ionisation electrode and connecting cable. Press "Reset" (see page 36).

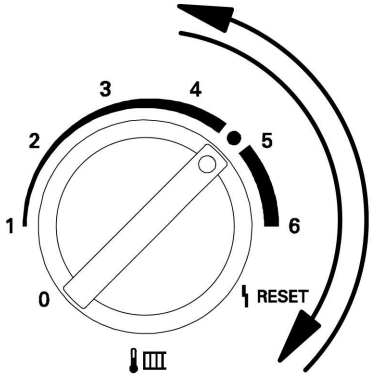
Fault messages on the display (cont.)

Fault code on the display	System characteristics	Cause	Measures
F4	Burner in a fault state	No flame signal is present	Check the ionisation electrode and leads, measure the ionisation current, check the gas pressure, check the gas train, ignition, ignition module and condensate drain. Press "Reset" (see page 36).
F8	Burner in a fault state	The fuel valve closes too late	Check the gas train. Check both control paths. Press "Reset" (see page 36).
F9	Burner in a fault state	Fan speed too low during the burner start	Check the fan, check the fan cables and supply; check the fan control. Press "Reset" (see page 36).
FA	Burner in a fault state	Fan not at standstill	Check the fan, fan connecting cables and fan control. Press "Reset" (see page 36).
FC	Burner blocked	Control unit or boiler coding card faulty	Replace boiler coding card or control unit
Fd	Burner blocked	Burner control unit fault	Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the equipment. Press "Reset" (see page 36). Replace control unit if the fault persists.

5354 802 GB

Fault messages on the display (cont.)

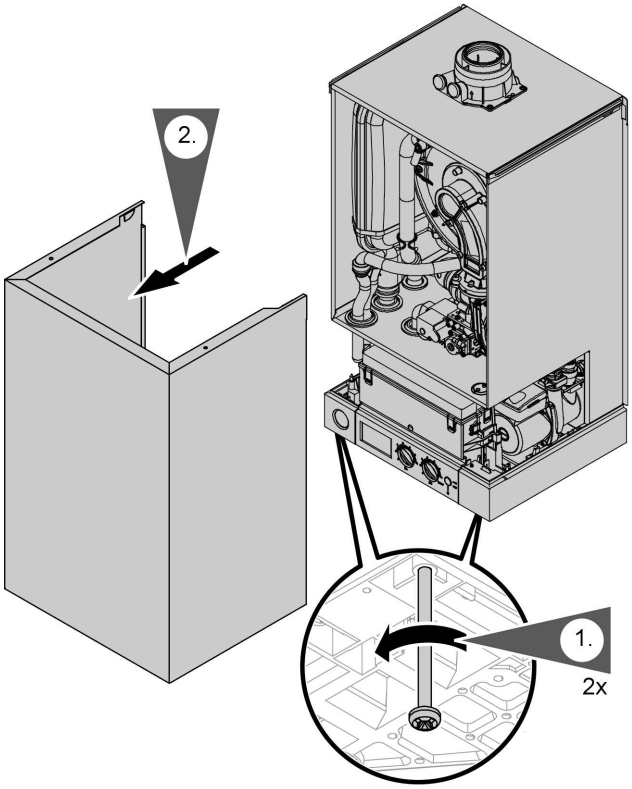
Press reset



Turn rotary selector "🌡" less than 2 s to "↯RESET", then back to the control range.

Repairs

Removing front panel



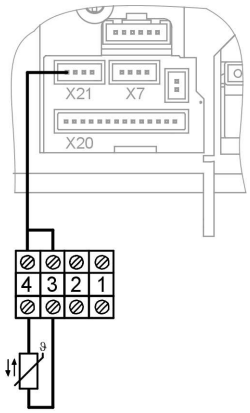
1. Release screws at the bottom of the boiler; do not remove completely.
2. Remove front panel.

Outside temperature sensor

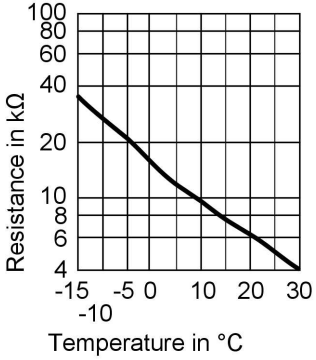
1. Open the control unit casing. See page 13.

5354 802 GB

Repairs (cont.)



2. Disconnect cables from outside temperature sensor.



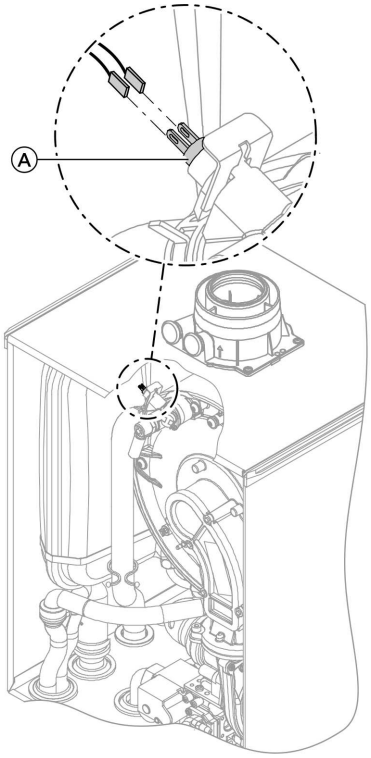
3. Check the sensor resistance and compare it with the curve.

4. Replace the sensor in case of severe deviation.

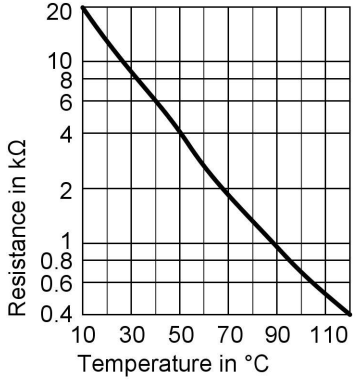
5354 802 GB

Repairs (cont.)

Boiler water temperature sensor



1. Pull the leads from boiler water temperature sensor Ⓐ and check the resistance.



5354 802 GB

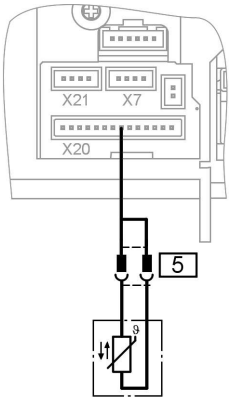
2. Check the sensor resistance and compare it with the curve.

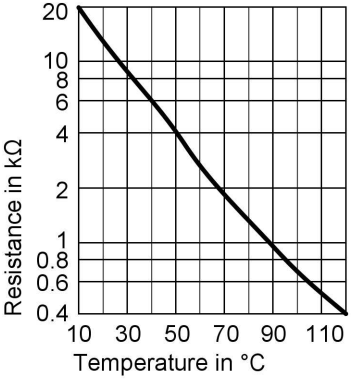
3. In case of severe deviation, drain boiler on the heating water side and replace the sensor.

Danger
The boiler water temperature sensor is immersed in the heating water (risk of scalding).
Drain the boiler before replacing the sensor.

Repairs (cont.)

Checking cylinder temperature sensor (gas fired condensing boiler)





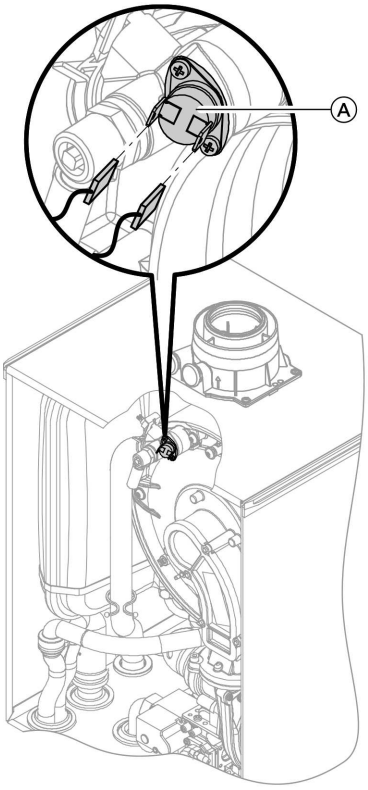
1. Remove plugs [5] from the cable harness and check the resistance.
2. Compare the sensor resistance with the curve.
3. Replace the sensor in case of severe deviation.

5354 802 GB

Repairs (cont.)

Checking the temperature limiter

If the burner control unit cannot be reset after a fault shutdown, although the boiler water temperature is below approx. 95 °C, check the temperature limiter.

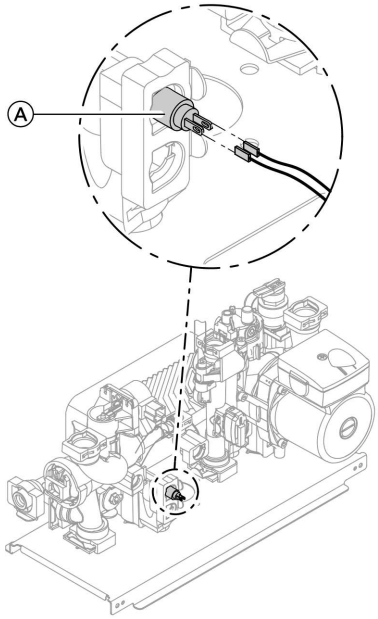


1. Pull the leads from temperature limiter Ⓐ.
2. Check the continuity of the temperature limiter with a multimeter. If it is open circuit, it is faulty.
3. Remove the faulty temperature limiter.
4. Install a new temperature limiter.
5. To reset press "Reset" on the control unit.

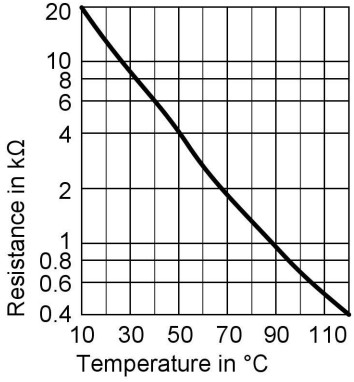
5354 802 GB

Repairs (cont.)

Checking the outlet temperature sensor (gas fired condensing combi boiler)



1. Pull the leads from outlet temperature sensor Ⓐ
2. Check the sensor resistance and compare it with the curve.



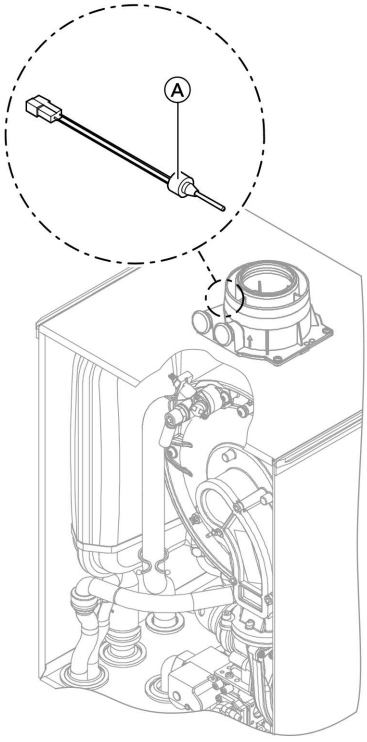
3. Replace the sensor in case of severe deviation.

Note
Water can leak when replacing the outlet temperature sensor. Shut off the cold water supply. Drain the DHW line and the plate-type heat exchanger (DHW side).

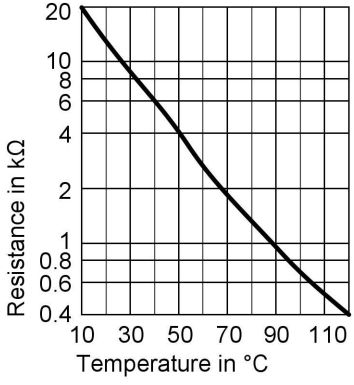
5354 802 GB

Repairs (cont.)

Checking the flue gas temperature sensor



1. Pull the leads from flue gas temperature sensor Ⓐ.
2. Check the sensor resistance and compare it with the curve.



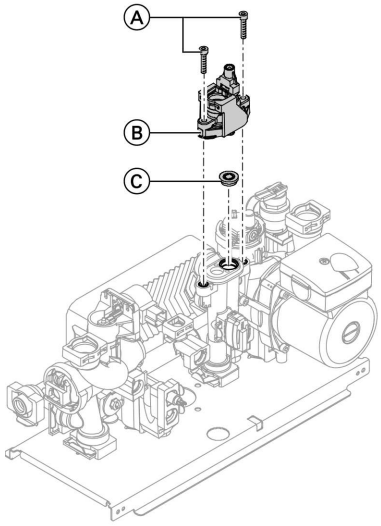
3. Replace the sensor in case of severe deviation.

5354 802 GB

Service

Repairs (cont.)

Replacing flow limiter (gas fired condensing combi boiler)



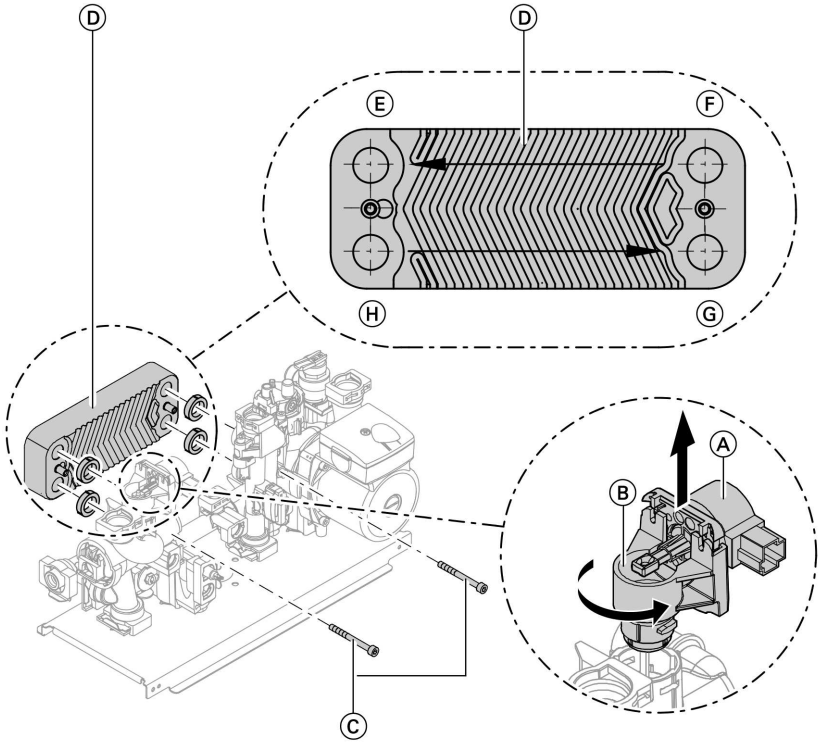
1. Drain the boiler from the DHW side.
2. Pivot the control unit downwards.
3. Undo screws Ⓐ.
4. Remove the cap Ⓑ.
5. Remove faulty flow limiter Ⓒ.
6. Select new flow limiter Ⓒ corresponding to boiler serial no. (see type plate) and the following table.
7. Insert new flow limiter Ⓒ.
8. Fit new cap Ⓑ provided.

Serial number (Type plate)	Flow rate l/min	Colour
7373 058	10	black
7373 059	14	brown
7373 061	10	black
7373 063	12	red
7373 065	14	brown
7373 066	10	black
7373 067	14	brown
7373 068	8	white
7373 069	10	black

5354 802 GB

Repairs (cont.)

Checking or replacing the plate-type heat exchanger (gas fired condensing combi boiler)



Ⓔ Heating water flow
Ⓕ Heating water return
Ⓖ Cold water
Ⓗ DHW

1. Shut off and drain the boiler on the heating water and the DHW side.

2. Flip down control unit.

3. Push the three-way valve drive Ⓐ slightly upwards.

4. Turn the three-way valve Ⓑ with drive Ⓐ 1/8 anticlockwise and remove.

5354 802 GB

Repairs (cont.)

5. Remove two screws Ⓒ from the plate-type heat exchanger and remove plate-type heat exchanger Ⓓ with gaskets.

   Note
   During removal, small amounts of water may trickle out and escape from the removed plate-type heat exchanger.

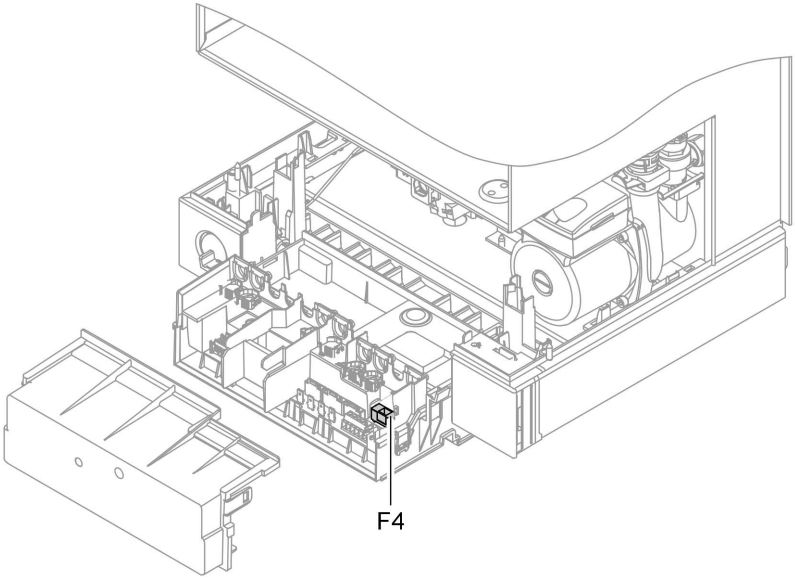
6. Check the DHW side for scaling and, if required, clean or replace the plate-type heat exchanger.

7. Check the heating water side for contamination and, if required, clean or replace the plate-type heat exchanger.

8. Install in reverse order with new gaskets.

   Note
   Ensure that fixing holes and seals are aligned. Install the heat plate exchanger the correct way round.

Checking the fuse



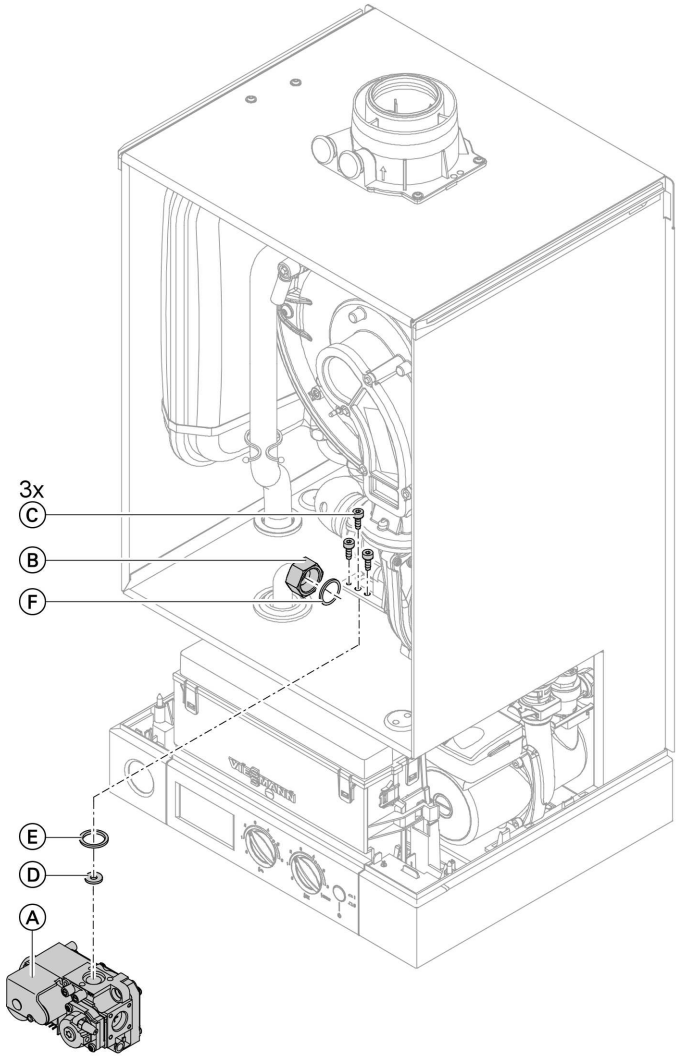
1. Switch OFF the power.

2. Open control unit casing (see page 13).

3. Check fuse F4.

Converting from LPG to natural gas

Removing gas restrictor



1. Pull power cable from gas train Ⓐ.
2. Remove union nut Ⓑ.
3. Undo three screws Ⓒ and remove gas train Ⓐ.

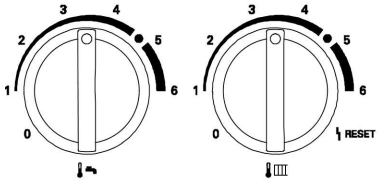
Converting from LPG to natural gas (cont.)

4. Remove gas restrictor Ⓓ from gas train.

5. Fit gas train Ⓐ with new gaskets Ⓔ and Ⓕ.
   Fixing screw torque Ⓒ: 3 Nm.
   Union nut torque Ⓑ: 22 Nm.

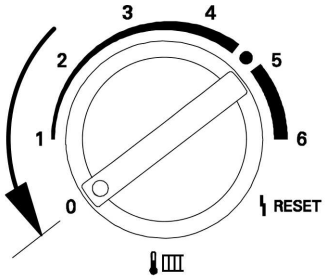
6. Remove or void gas type sticker on the top of the boiler (next to the type plate).

Converting gas type on the control unit



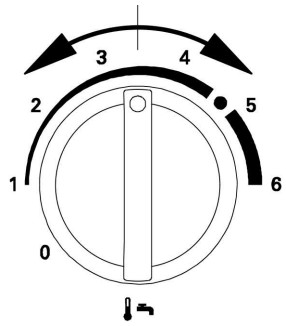
1. Turn ON/OFF switch ON.

2. Simultaneously turn rotary selectors "🌡🚿" and "🌡▥" to their central position.
   "SERV" appears on the display.



3. Turn rotary selector "🌡▥" anticlockwise within 2 s.
   "⊱" and the set value flash on the display.

Converting from LPG to natural gas (cont.)



4. Adjust the control unit to natural gas or LPG by turning the rotary selector "".
   The display shows:
   - **"0"** for operation with natural gas
     or
   - **"1"** for operation with LPG.

5. Do **not** adjust the rotary selectors for 15 s. The set operating mode is then saved and the control unit returns to standard mode.

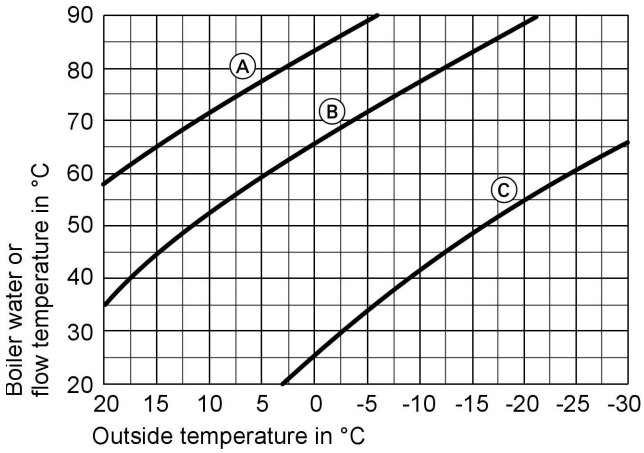
Adjusting the burner

See "Checking the CO_2 content" on page 22.

Functions and operating conditions in weather-compensated mode

In weather-compensated mode, the boiler water temperature is regulated subject to the outside temperature.

Heating curve of weather-compensated control unit



Ⓐ Rotary selector "🌡" setting: 6

Ⓑ Delivered condition

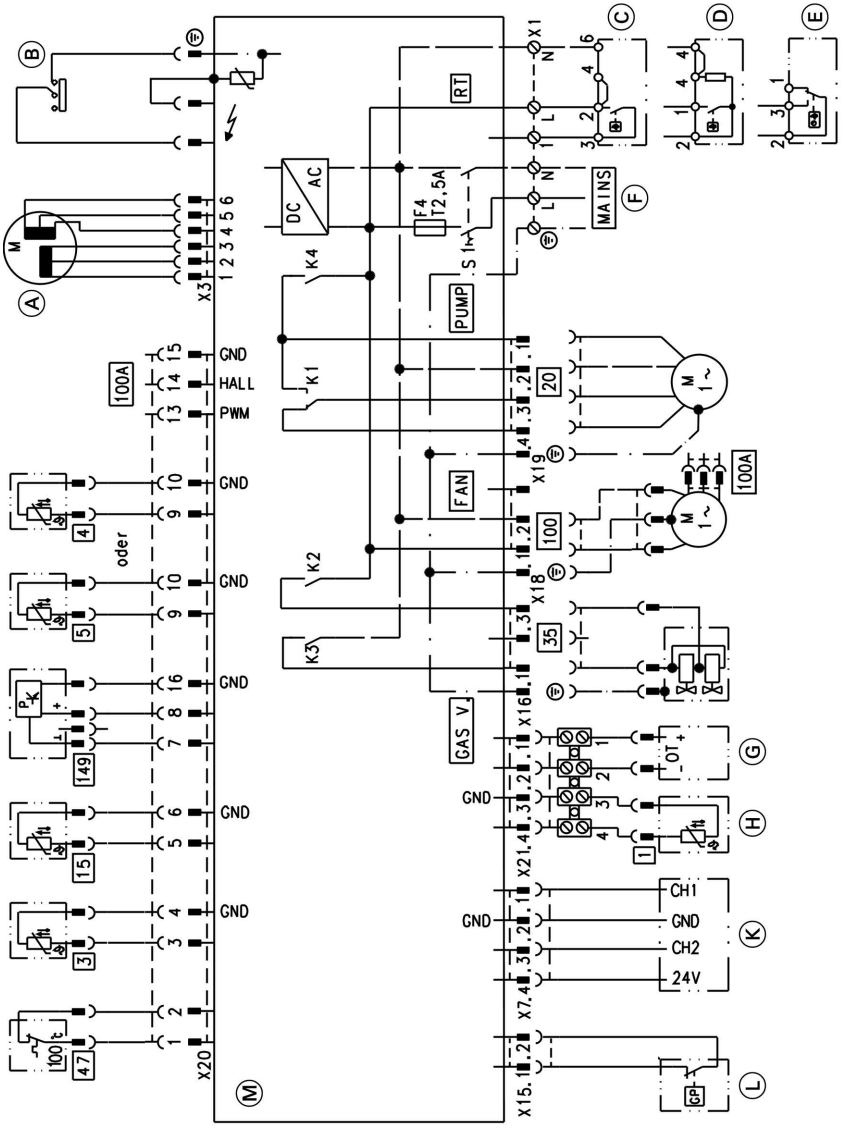
Ⓒ Rotary selector "🌡" setting: 1

Frost protection function

Frost protection function is only possible when an outside temperature sensor is connected.

Frost protection function is active at outside temperatures of < 5°C. The burner is switched ON and the boiler water temperature is held at 20 °C.

Connection and wiring diagram



Ⓐ Stepper motor diverter valve
Ⓑ Ignition/Ionisation
Ⓒ Vitotrol 100, type UTA
Ⓓ Vitotrol 100, type RT
Ⓔ Vitotrol 100, type UTD
Ⓕ Mains input 230V/50Hz

5354 802 GB

Connection and wiring diagram (cont.)

Ⓖ Remote control (accessory)
Ⓗ Outside temperature sensor (accessory)
Ⓚ Time switch (accessories)
Ⓛ Gas pressure limiter (accessory)
Ⓜ PCB inside the control unit
X ... Electrical interface
[3] Boiler water temperature sensor
[4] Outlet temperature sensor (gas fired condensing combi boiler)
[5] Cylinder temperature sensor (gas fired condensing boiler)
[15] Flue gas temperature sensor
[20] Circulation pump 230V~
[35] Gas solenoid valve
[47] Temperature limiter
[100] Fan motor 230V~
[100]A Fan control
[149] Throughput sensor

5354 802 GB

Parts lists

When ordering spare parts:
Quote the part and serial no. (see type plate) and the item number of the required part (as per this parts list). Obtain standard parts from your local supplier.

001 Heat exchanger
002 Moulded hose heating water flow
003 Moulded hose heating water return
004 Hose connector adapter
005 Heating water return connection elbow
006 Heating water flow connection elbow
007 Gas supply pipe
009 Pressure gauge
010 Boiler flue connection
011 Drain valve
012 Siphon
013 Flue gas gasket
014 Diaphragm expansion vessel
015 Connection line; diaphragm expansion vessel
016 Boiler flue connection plug
017 Thermal insulation block
018 Condensate hose
019 Condensate hose 400 mm
020 Ventilation air gasket
021 Guide rails (set)
023 Safety valve
027 Hose clip DN 25
029 Hydraulic
030 Circulation pump motor
031 Plate-type heat exchanger
032 Plate-type heat exchanger gasket set
033 Linear stepper motor
034 Flow sensor
035 Air vent valve
036 Flow limiter
037 Bypass cartridge
038 Check valve
039 Clip ∅ 8
040 Clip ∅ 10
041 Clip ∅ 13.5
042 Clip ∅ 16
043 Clip ∅ 18
044 Clip SIV (5 pce.)
047 O-ring ∅ 17 x 4 (5 pce.)
048 Expansion tank
050 Burner gasket
051 Insulation ring
052 Burner gauze assembly
053 Burner gauze assembly gasket
055 Gasket ignition and ionisation electrode (5 pce.)
056 Fan
057 Gas valve (G 20/G 25)
058 Burner door
061 Venturi extension
062 Gasket burner flange
070 Control unit
071 Cover – wiring chamber
072 Thermocouple
073 Boiler water temperature sensor
074 Flue gas temperature sensor
083 Outlet temperature sensor
100 Front panel
101 Control flap
105 Wall retainer

Wearing parts
054 Ignition and ionisation electrode

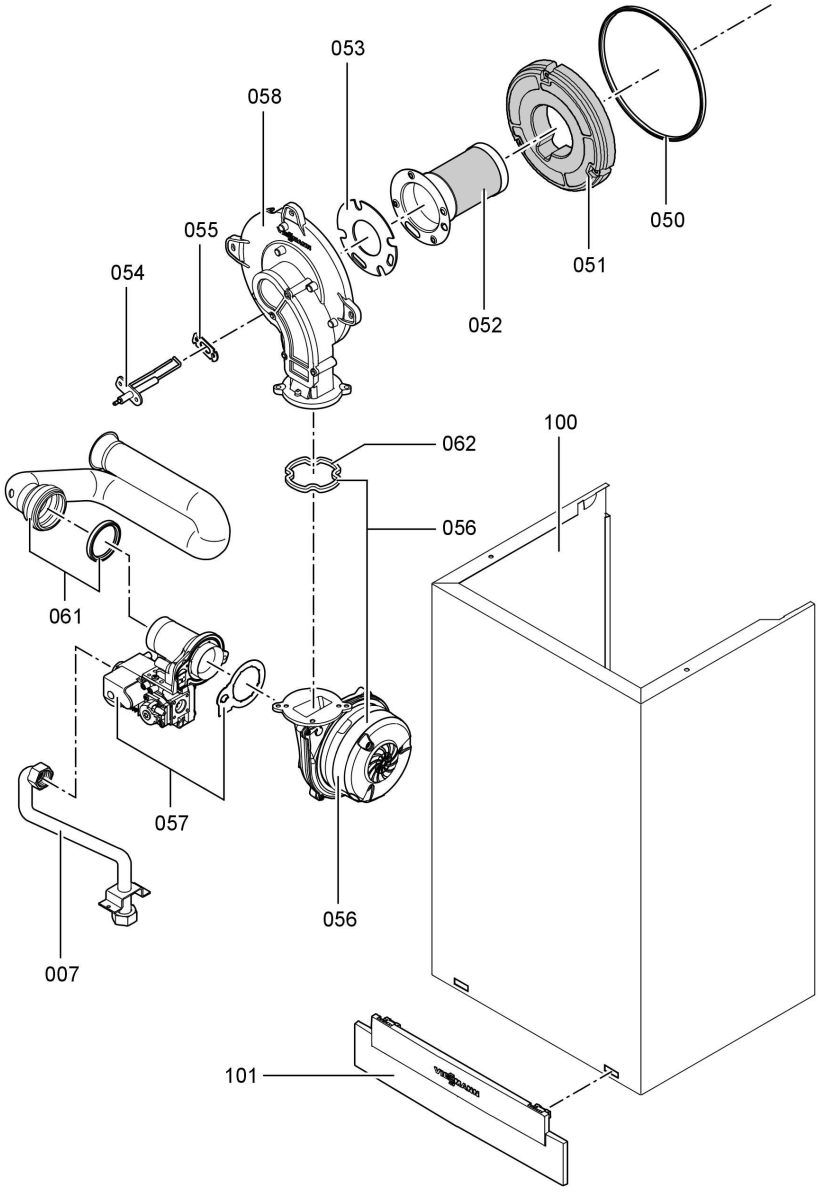
Parts not shown
059 Conversion kit G 31
075 Cable harness X20 (gas fired condensing combi boiler)
076 Cable harness X20 (gas fired condensing boiler)
077 Gas solenoid valve connecting cable 35
078 Fan connecting cable 100
079 Ignition cable

Parts lists (cont.)

080 Cable harness stepper motor
081 Fuse 2.5 A (slow) (10 pce.)
082 Cable fixing
102 Spray paint, Vitowhite
103 Touch-up paint stick, Vitowhite
104 Special grease
110 Installation and service instructions
111 Operating instructions
Ⓐ Type plate

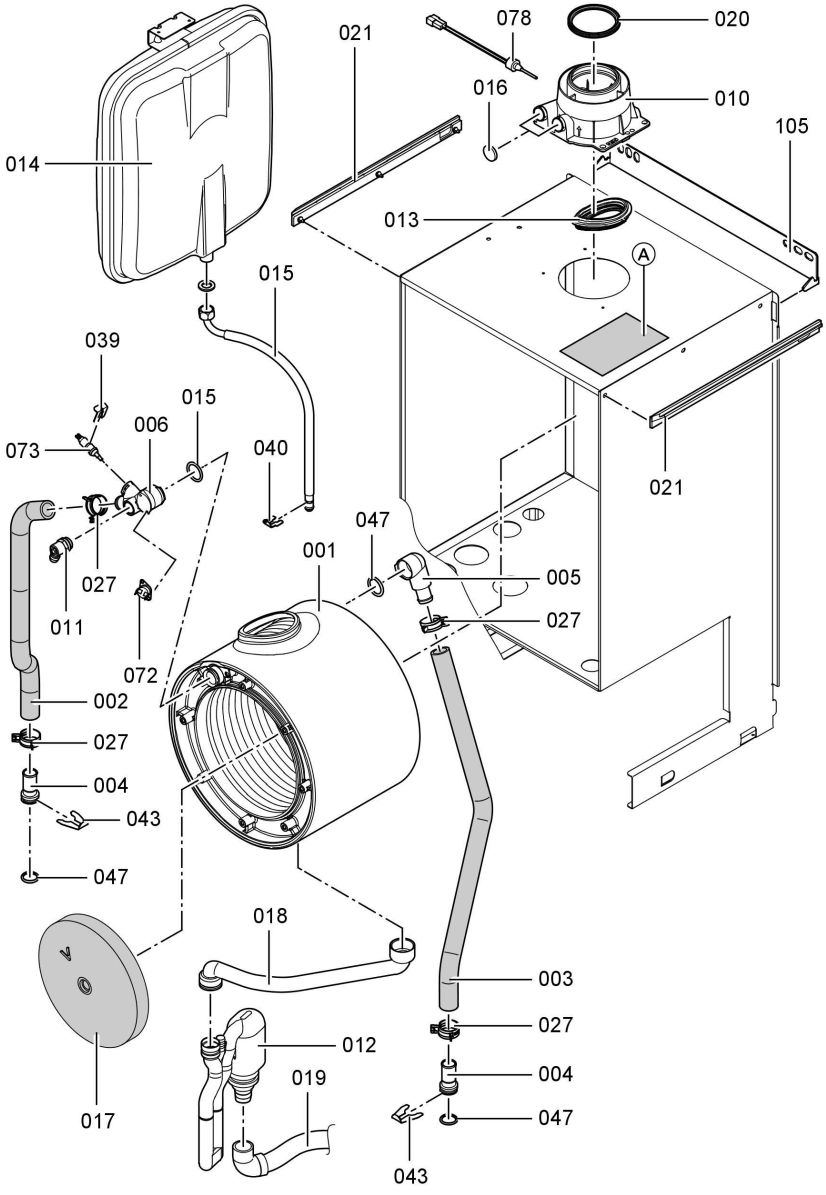
5354 802 GB

Parts lists (cont.)



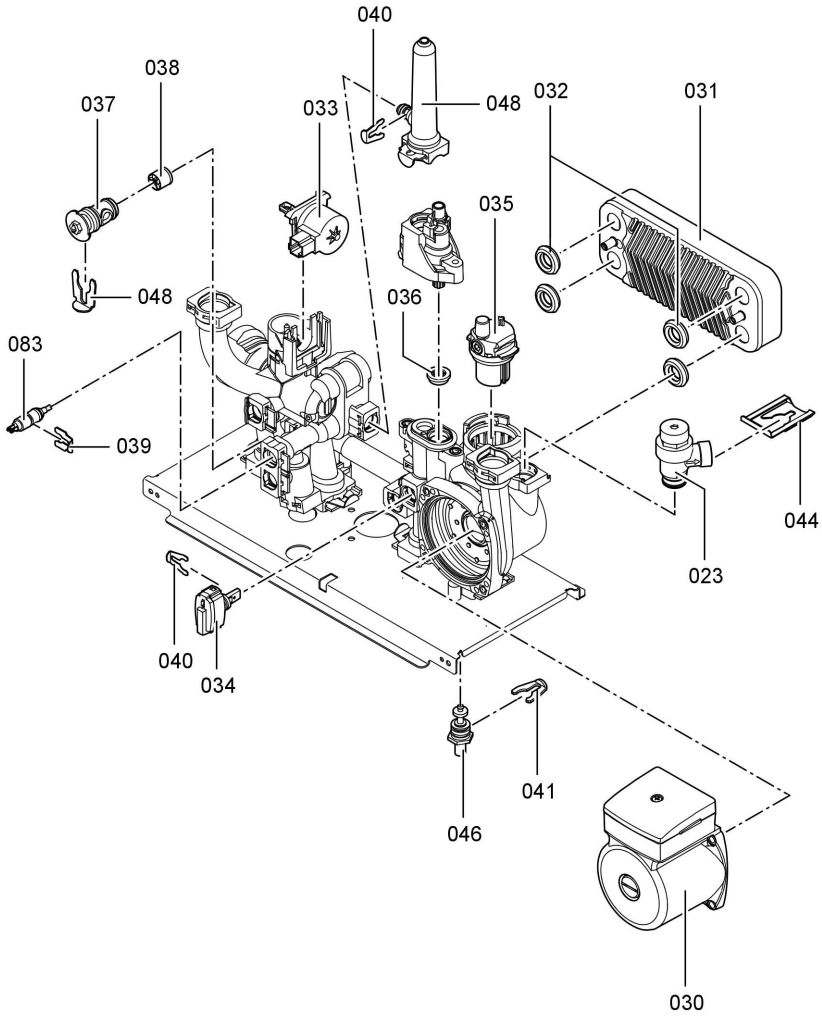
5354 802 GB

Parts lists (cont.)



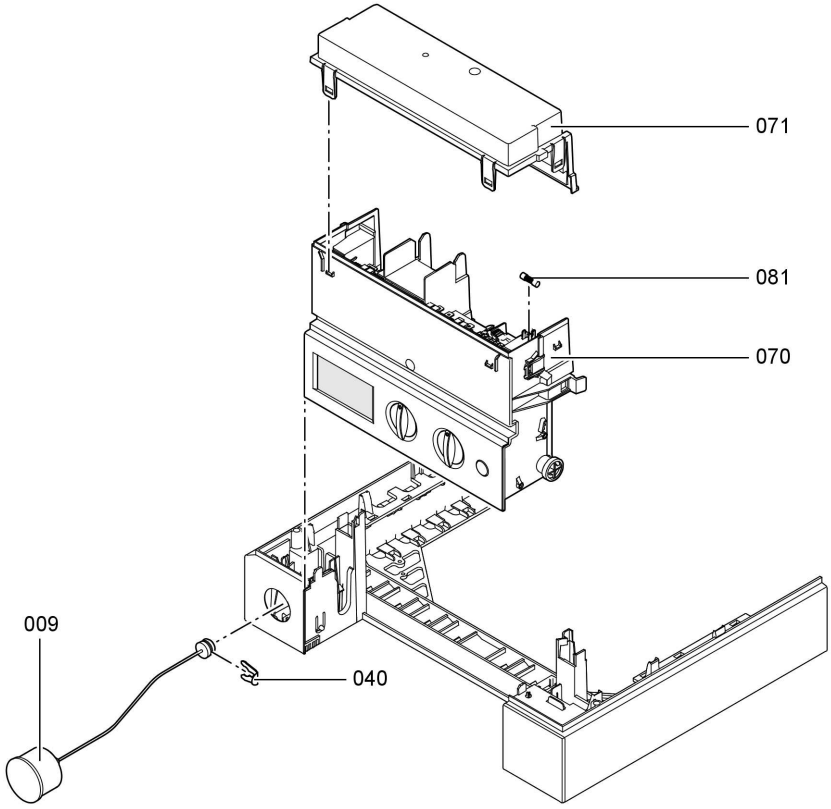
5354 802 GB

Parts lists (cont.)



5354 802 GB

Parts lists (cont.)



5354 802 GB

Specification

Rated voltage: 230 V~
Rated frequency: 50 Hz
Rated current: 2.0 A~
Safety class: I
Protection: IP X4 to EN 60529

Permissible ambient temperature
- during operation: 0 to +40 °C
- during storage and transport: -20 to +65 °C

Temperature limiter setting: 100 °C (fixed)
Line fuse (mains): max. 16 A

Gas fired condensing boiler, class II2H3P

Rated output range in heating mode				
TV/TR 50/30 °C	**kW**	**9 to 26**	**11 to 30**	**11 to 35**
TV/TR 80/60 °C	**kW**	**8.2 to 23.7**	**10.0 to 27.3**	**10.0 to 31.9**
Rated output range for DHW heating	kW	8.2 to 23.7	10.0 to 27.3	10.0 to 31.9
Rated thermal load range	kW	8.4 to 24.3	10.3 to 28.0	10.3 to 32.7
Gas council no.		41-819-12	41-819-13	41-819-14
Connection values *1 relative to the max. load with				
Natural gas H	m^3/h	2.6	3.0	3.5
LPG P	kg/h	1.9	2.2	2.6
Power consumption (max.)	W	107	111	154
Weight without front panel (installation)	kg	33	38	38
Product ID		CE-0085 BT 0029		

Gas fired condensing combi boiler, class II2H3P

Rated output range in heating mode				
TV/TR 50/30 °C	**kW**	**9 to 26**	**11 to 26**	**11 to 26**
TV/TR 80/60 °C	**kW**	**8.2 to 23.7**	**10.0 to 23.7**	**10.0 to 23.7**
Rated output range for DHW heating	kW	8.2 to 26.0	10.0 to 30.0	10.0 to 35.0

*1 *The supply values are only for documentation purposes (e.g. in the gas contract application) or to estimate the supplementary volumetric settings. Because of factory settings, the gas pressure must not be altered from these settings. Reference: 15 °C, 1013 mbar.*

Specification (cont.)

Rated output range in heating mode **Tv/TR 50/30 °C** **Tv/TR 80/60 °C**	**kW** **kW**	**9 to 26** **8.2 to 23.7**	**11 to 26** **10.0 to 23.7**	**11 to 26** **10.0 to 23.7**
Rated thermal load range	kW	8.4 to 27.1	10.3 to 31.3	10.3 to 36.5
Gas council no.		47-819-18	47-819-19	47-819-20
Connection values *1 relative to the max. load with				
Natural gas H	m^3/h	2.9	3.3	3.9
LPG P	kg/h	2.1	2.4	2.9
Power consumption (max.)	W	111	144	167
Gas fired condensing combi boiler (DHW heating) Permissible operating pressure	bar	10	10	10
Rated water volume at ΔT = 35 K	l/min	10.6	12.3	14.3
Set flow rate (max.)	l/min	10.0	12.0	14.0
Weight without front panel (installation)	kg	34	39	39
Product ID		CE-0085 BT 0029		

*1 *The supply values are only for documentation purposes (e.g. in the gas contract application) or to estimate the supplementary volumetric settings. Because of factory settings, the gas pressure must not be altered from these settings. Reference: 15 °C, 1013 mbar.*

5354 802 GB

Declaration of conformity

Declaration of conformity for the Vitodens 100-W

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitodens 100-W** complies with the following standards:

DIN 4702–6
EN 483
EN 625
EN 677
EN 50 165
EN 55 014
EN 60 335
EN 61 000-3-2
EN 61 000-3-3

In accordance with the following Directives, this product is designated **CE-0085**:

90/396/EEC
92/ 42/EEC
2004/108/EC
2006/95/EC

This product complies with the requirements of the Efficiency Directive (92/42/EEC) for **condensing boilers**.

Allendorf, 04.02.08

Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

5354 802 GB

Keyword index

B
Boiler water temperature sensor ... 39
Burner gasket ... 25
Burner gauze assembly ... 25
Burner installation ... 29
Burner removal ... 24

C
Cleaning the combustion chamber 27
Cleaning the heat exchanger ... 27
Commissioning ... 18
Condensate connection ... 12
Condensate drain ... 28
Connection diagram ... 51
Connections ... 10
Connections on the water side ... 10
Cylinder temperature sensor ... 40

D
Declaration of Conformity ... 61

E
Electrical connections ... 14

F
Fault code ... 33
Fault messages ... 33
Filling function ... 18
Filling the system ... 18, 19
Flow limiter ... 44
Flue pipe ... 13
Frost protection ... 50
Function sequence ... 32
Fuse ... 46

G
Gas connection ... 11
Gas type conversion ... 20, 47
Gas type conversion
■ LPG ... 21
■ Natural gas ... 47

H
Heating curve ... 50

I
Ignition ... 26
Ignition electrodes ... 26
Ionisation electrode ... 26

L
LPG ... 20

O
Opening the control unit ... 13
Outlet temperature sensor ... 42, 43
Outside temperature sensor ... 37

P
Plate-type heat exchanger ... 46

R
Reset ... 36

S
Safety chain ... 41
Safety valve ... 11
Siphon ... 12, 28
Spare parts ... 53
Specifications ... 59
System pressure ... 19

T
Temperature limiter ... 41
Troubleshooting ... 37

V
Ventilation air pipe ... 13
Venting ... 20

W
Wall mounting ... 7
Weather-compensated mode ... 50

5354 802 GB

Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5354 802 GB Subject to technical modifications.

Printed on environmentally friendly, chlorine-free bleached paper